ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

September 28, 2021

Report to:
Holly Beggy
Hudbay Minerals
5255 E Williams Circle
Suite W1065
Tucson, AZ 85711

cc: David Krizek

Bill to:
Rosemont Copper Company
Hudbay Minerals
5255 E Williams Circle
Suite W1065
Tuscon, AZ 85711

Project ID:
ACZ Project ID: L68619

Holly Beggy:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on September 20, 2021. This project has been assigned to ACZ's project number, L68619. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L68619. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after October 28, 2021. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

Hudbay Minerals
Project ID:
Sample ID: D1-25 BIO

ACZ Sample ID: ***L68619-01***
Date Sampled: *09/15/21 08:32*
Date Received: *09/20/21*
Sample Matrix: *Plant Tissue*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, total (3050)	M6010D ICP	107	36.5		*	mg/Kg	5.35	26.8	09/24/21 10:02	jlw
Antimony, total (3050)	M6020B ICP-MS	535	<0.214	U	*	mg/Kg	0.214	1.07	09/27/21 14:40	bsu
Arsenic, total (3050)	M6020B ICP-MS	535	0.140	B	*	mg/Kg	0.107	0.535	09/27/21 14:40	bsu
Cadmium, total (3050)	M6020B ICP-MS	535	<0.0268	U	*	mg/Kg	0.0268	0.134	09/27/21 14:40	bsu
Calcium, total (3050)	M6010D ICP	107	8070		*	mg/Kg	10.7	53.5	09/24/21 10:02	jlw
Copper, total (3050)	M6020B ICP-MS	535	17.8		*	mg/Kg	0.428	1.07	09/27/21 14:40	bsu
Iron, total (3050)	M6010D ICP	107	114		*	mg/Kg	6.42	16.1	09/24/21 10:02	jlw
Lead, total (3050)	M6020B ICP-MS	535	0.259	B	*	mg/Kg	0.0535	0.268	09/27/21 14:40	bsu
Magnesium, total (3050)	M6010D ICP	107	1860		*	mg/Kg	21.4	107	09/24/21 10:02	jlw
Manganese, total (3050)	M6010D ICP	107	38.1		*	mg/Kg	1.07	5.35	09/24/21 10:02	jlw
Molybdenum, total (3050)	M6010D ICP	107	<2.14	U	*	mg/Kg	2.14	10.7	09/24/21 10:02	jlw
Nickel, total (3050)	M6020B ICP-MS	535	0.430	B	*	mg/Kg	0.214	0.535	09/27/21 14:40	bsu
Selenium, total (3050)	M6020B ICP-MS	535	1.09		*	mg/Kg	0.0535	0.134	09/27/21 14:40	bsu
Zinc, total (3050)	M6010D ICP	107	45.2		*	mg/Kg	2.14	5.35	09/24/21 10:02	jlw

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Moisture Content	D2216-80	1	59.8		*	%	0.1	0.5	09/21/21 13:00	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP-MS				*				09/23/21 8:35	mep
Digestion - Hot Plate	M3050B ICP				*				09/23/21 8:35	mep
Plant Tissue Pulverization	USDA #60, Method 53				*				09/22/21 9:55	mep/jpb

Arizona license number: AZ0102

ACZ Laboratories, Inc.
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Inorganic Reference

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:
https://acz.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf

REP001.03.15.02

Hudbay Minerals

ACZ Project ID: ***L68619***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Aluminum, total (3050) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG527939													
WG527939ICV	ICV	09/24/21 9:18	II210923-1	2		1.989	mg/L	99	90	110			
WG527939ICB	ICB	09/24/21 9:22				U	mg/L		-0.15	0.15			
WG527824PBS	PBS	09/24/21 9:46				U	mg/Kg		-15	15			
WG527824LCSS	LCSS	09/24/21 9:50	PCN53858	598		246.2	mg/Kg		177.8	266.2			
WG527824LFB1	LFB	09/24/21 9:54	II210910-2	1.0008		1.047	mg/Kg	105	80	120			
WG527824LFBD1	LFBD	09/24/21 9:58	II210910-2	1.0008		1.024	mg/Kg	102	80	120	2	20	
L68619-01MS2	MS	09/24/21 10:10	II210910-2	107.0856	36.5	155.043	mg/Kg	111	75	125			
L68619-01MSD2	MSD	09/24/21 10:14	II210910-2	107.0856	36.5	147.125	mg/Kg	103	75	125	5	20	

Antimony, total (3050) M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG528085													
WG528085ICV	ICV	09/27/21 14:22	MS210727-2	.0201		.01926	mg/L	96	90	110			
WG528085ICB	ICB	09/27/21 14:23				U	mg/L		-0.0012	0.0012			
WG527824PBS	PBS	09/27/21 14:33				U	mg/Kg		-0.6	0.6			
WG527824LFB2	LFB	09/27/21 14:36	MS210826-5	.01		.00797	mg/Kg	80	80	120			
WG527824LFBD2	LFBD	09/27/21 14:38	MS210826-5	.01		.00818	mg/Kg	82	80	120	3	20	
L68619-01MS1	MS	09/27/21 14:44	MS210826-5	5.35	U	4.41427	mg/Kg	83	75	125			
L68619-01MSD1	MSD	09/27/21 14:49	MS210826-5	5.35	U	4.96226	mg/Kg	93	75	125	12	20	

Arsenic, total (3050) M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG528085													
WG528085ICV	ICV	09/27/21 14:22	MS210727-2	.05		.05022	mg/L	100	90	110			
WG528085ICB	ICB	09/27/21 14:23				U	mg/L		-0.0006	0.0006			
WG527824PBS	PBS	09/27/21 14:33				U	mg/Kg		-0.3	0.3			
WG527824LFB2	LFB	09/27/21 14:36	MS210826-5	.05005		.05103	mg/Kg	102	80	120			
WG527824LFBD2	LFBD	09/27/21 14:38	MS210826-5	.05005		.0523	mg/Kg	104	80	120	2	20	
L68619-01MS1	MS	09/27/21 14:44	MS210826-5	26.77675	.14	28.12337	mg/Kg	105	75	125			
L68619-01MSD1	MSD	09/27/21 14:49	MS210826-5	26.77675	.14	27.55821	mg/Kg	102	75	125	2	20	

Cadmium, total (3050) M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG528085													
WG528085ICV	ICV	09/27/21 14:22	MS210727-2	.05		.050315	mg/L	101	90	110			
WG528085ICB	ICB	09/27/21 14:23				U	mg/L		-0.00015	0.00015			
WG527824PBS	PBS	09/27/21 14:33				U	mg/Kg		-0.075	0.075			
WG527824LCSS	LCSS	09/27/21 14:34	PCN53858	1.52		1.40467	mg/Kg		1.22	1.82			
WG527824LFB2	LFB	09/27/21 14:36	MS210826-5	.05005		.049729	mg/Kg	99	80	120			
WG527824LFBD2	LFBD	09/27/21 14:38	MS210826-5	.05005		.050154	mg/Kg	100	80	120	1	20	
L68619-01MS1	MS	09/27/21 14:44	MS210826-5	26.77675	U	26.991424	mg/Kg	101	75	125			
L68619-01MSD1	MSD	09/27/21 14:49	MS210826-5	26.77675	U	26.420638	mg/Kg	99	75	125	2	20	

Hudbay Minerals

ACZ Project ID: ***L68619***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Calcium, total (3050) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG527939													
WG527939ICV	ICV	09/24/21 9:18	II210923-1	100		101.3	mg/L	101	90	110			
WG527939ICB	ICB	09/24/21 9:22				U	mg/L		-0.3	0.3			
WG527824PBS	PBS	09/24/21 9:46				U	mg/Kg		-30	30			
WG527824LCSS	LCSS	09/24/21 9:50	PCN53858	50500		50690	mg/Kg		40400	60600			
WG527824LFB1	LFB	09/24/21 9:54	II210910-2	67.98972		71.56	mg/Kg	105	80	120			
WG527824LFBD1	LFBD	09/24/21 9:58	II210910-2	67.98972		70.77	mg/Kg	104	80	120	1	20	
L68619-01MS2	MS	09/24/21 10:10	II210910-2	7274.90004	8070	14327.3	mg/Kg	86	75	125			
L68619-01MSD2	MSD	09/24/21 10:14	II210910-2	7274.90004	8070	14220.3	mg/Kg	85	75	125	1	20	

Copper, total (3050) M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG528085													
WG528085ICV	ICV	09/27/21 14:22	MS210727-2	.05		.0515	mg/L	103	90	110			
WG528085ICB	ICB	09/27/21 14:23				U	mg/L		-0.0024	0.0024			
WG527824PBS	PBS	09/27/21 14:33				U	mg/Kg		-1.2	1.2			
WG527824LCSS	LCSS	09/27/21 14:34	PCN53858	4.7		4.70429	mg/Kg		3.8	5.6			
WG527824LFB2	LFB	09/27/21 14:36	MS210826-5	.05		.05282	mg/Kg	106	80	120			
WG527824LFBD2	LFBD	09/27/21 14:38	MS210826-5	.05		.05327	mg/Kg	107	80	120	1	20	
L68619-01MS1	MS	09/27/21 14:44	MS210826-5	26.75	17.8	46.84201	mg/Kg	109	75	125			
L68619-01MSD1	MSD	09/27/21 14:49	MS210826-5	26.75	17.8	44.46706	mg/Kg	100	75	125	5	20	

Iron, total (3050) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG527939													
WG527939ICV	ICV	09/24/21 9:18	II210923-1	2		1.969	mg/L	98	90	110			
WG527939ICB	ICB	09/24/21 9:22				U	mg/L		-0.18	0.18			
WG527824PBS	PBS	09/24/21 9:46				U	mg/Kg		-18	18			
WG527824LCSS	LCSS	09/24/21 9:50	PCN53858	368		315.5	mg/Kg		294	442			
WG527824LFB1	LFB	09/24/21 9:54	II210910-2	1.0001		1.042	mg/Kg	104	80	120			
WG527824LFBD1	LFBD	09/24/21 9:58	II210910-2	1.0001		1.025	mg/Kg	102	80	120	2	20	
L68619-01MS2	MS	09/24/21 10:10	II210910-2	107.0107	114	188.962	mg/Kg	70	75	125			M2
L68619-01MSD2	MSD	09/24/21 10:14	II210910-2	107.0107	114	177.941	mg/Kg	60	75	125	6	20	M2

Lead, total (3050) M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG528085													
WG528085ICV	ICV	09/27/21 14:22	MS210727-2	.05		.05089	mg/L	102	90	110			
WG528085ICB	ICB	09/27/21 14:23				U	mg/L		-0.0003	0.0003			
WG527824PBS	PBS	09/27/21 14:33				U	mg/Kg		-0.15	0.15			
WG527824LFB2	LFB	09/27/21 14:36	MS210826-5	.05005		.05033	mg/Kg	101	80	120			
WG527824LFBD2	LFBD	09/27/21 14:38	MS210826-5	.05005		.0511	mg/Kg	102	80	120	2	20	
L68619-01MS1	MS	09/27/21 14:44	MS210826-5	26.77675	.259	27.27964	mg/Kg	101	75	125			
L68619-01MSD1	MSD	09/27/21 14:49	MS210826-5	26.77675	.259	26.89036	mg/Kg	99	75	125	1	20	

Hudbay Minerals

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Magnesium, total (3050) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG527939													
WG527939ICV	ICV	09/24/21 9:18	II210923-1	100		96.45	mg/L	96	90	110			
WG527939ICB	ICB	09/24/21 9:22				U	mg/L		-0.6	0.6			
WG527824PBS	PBS	09/24/21 9:46				U	mg/Kg		-60	60			
WG527824LFB1	LFB	09/24/21 9:54	II210910-2	49.99828		48.99	mg/Kg	98	80	120			
WG527824LFBD1	LFBD	09/24/21 9:58	II210910-2	49.99828		48.53	mg/Kg	97	80	120	1	20	
L68619-01MS2	MS	09/24/21 10:10	II210910-2	5349.81596	1860	6996.73	mg/Kg	96	75	125			
L68619-01MSD2	MSD	09/24/21 10:14	II210910-2	5349.81596	1860	6751.7	mg/Kg	91	75	125	4	20	

Manganese, total (3050) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG527939													
WG527939ICV	ICV	09/24/21 9:18	II210923-1	2		1.957	mg/L	98	90	110			
WG527939ICB	ICB	09/24/21 9:22				U	mg/L		-0.03	0.03			
WG527824PBS	PBS	09/24/21 9:46				U	mg/Kg		-3	3			
WG527824LCSS	LCSS	09/24/21 9:50	PCN53858	246		238.8	mg/Kg		197	295			
WG527824LFB1	LFB	09/24/21 9:54	II210910-2	.5005		.518	mg/Kg	103	80	120			
WG527824LFBD1	LFBD	09/24/21 9:58	II210910-2	.5005		.512	mg/Kg	102	80	120	1	20	
L68619-01MS2	MS	09/24/21 10:10	II210910-2	53.5535	38.1	94.139	mg/Kg	105	75	125			
L68619-01MSD2	MSD	09/24/21 10:14	II210910-2	53.5535	38.1	88.104	mg/Kg	93	75	125	7	20	

Moisture Content D2216-80

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG527685													
WG527685PBS	PBS	09/21/21 13:00				100	%		99.9	100.1			

Molybdenum, total (3050) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG527939													
WG527939ICV	ICV	09/24/21 9:18	II210923-1	2		1.996	mg/L	100	90	110			
WG527939ICB	ICB	09/24/21 9:22				U	mg/L		-0.06	0.06			
WG527824PBS	PBS	09/24/21 9:46				U	mg/Kg		-6	6			
WG527824LFB1	LFB	09/24/21 9:54	II210910-2	.501		.512	mg/Kg	102	80	120			
WG527824LFBD1	LFBD	09/24/21 9:58	II210910-2	.501		.507	mg/Kg	101	80	120	1	20	
L68619-01MS2	MS	09/24/21 10:10	II210910-2	53.607	U	56.111	mg/Kg	105	75	125			
L68619-01MSD2	MSD	09/24/21 10:14	II210910-2	53.607	U	54.217	mg/Kg	101	75	125	3	20	

Nickel, total (3050) M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG528085													
WG528085ICV	ICV	09/27/21 14:22	MS210727-2	.05		.05087	mg/L	102	90	110			
WG528085ICB	ICB	09/27/21 14:23				U	mg/L		-0.0012	0.0012			
WG527824PBS	PBS	09/27/21 14:33				U	mg/Kg		-0.6	0.6			
WG527824LFB2	LFB	09/27/21 14:36	MS210826-5	.05		.05143	mg/Kg	103	80	120			
WG527824LFBD2	LFBD	09/27/21 14:38	MS210826-5	.05		.05208	mg/Kg	104	80	120	1	20	
L68619-01MS1	MS	09/27/21 14:44	MS210826-5	26.75	.43	27.30413	mg/Kg	100	75	125			
L68619-01MSD1	MSD	09/27/21 14:49	MS210826-5	26.75	.43	26.8852	mg/Kg	99	75	125	2	20	

Hudbay Minerals

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NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Selenium, total (3050) M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG528085													
WG528085ICV	ICV	09/27/21 14:22	MS210727-2	.05		.04973	mg/L	99	90	110			
WG528085ICB	ICB	09/27/21 14:23				.00014	mg/L		-0.0003	0.0003			
WG527824PBS	PBS	09/27/21 14:33				U	mg/Kg		-0.15	0.15			
WG527824LFB2	LFB	09/27/21 14:36	MS210826-5	.025		.02456	mg/Kg	98	80	120			
WG527824LFBD2	LFBD	09/27/21 14:38	MS210826-5	.025		.02506	mg/Kg	100	80	120	2	20	
L68619-01MS1	MS	09/27/21 14:44	MS210826-5	13.375	1.09	15.11351	mg/Kg	105	75	125			
L68619-01MSD1	MSD	09/27/21 14:49	MS210826-5	13.375	1.09	14.85985	mg/Kg	103	75	125	2	20	

Zinc, total (3050) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG527939													
WG527939ICV	ICV	09/24/21 9:18	II210923-1	2		1.922	mg/L	96	90	110			
WG527939ICB	ICB	09/24/21 9:22				U	mg/L		-0.06	0.06			
WG527824PBS	PBS	09/24/21 9:46				U	mg/Kg		-6	6			
WG527824LCSS	LCSS	09/24/21 9:50	PCN53858	30.9		28.64	mg/Kg		24.7	37.1			
WG527824LFB1	LFB	09/24/21 9:54	II210910-2	.50045		.521	mg/Kg	104	80	120			
WG527824LFBD1	LFBD	09/24/21 9:58	II210910-2	.50045		.519	mg/Kg	104	80	120	0	20	
L68619-01MS2	MS	09/24/21 10:10	II210910-2	53.54815	45.2	100.505	mg/Kg	103	75	125			
L68619-01MSD2	MSD	09/24/21 10:14	II210910-2	53.54815	45.2	96.428	mg/Kg	96	75	125	4	20	

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

Hudbay Minerals

ACZ Project ID: ***L68619***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L68619-01	WG527939	Iron, total (3050)	M6010D ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG528085	Selenium, total (3050)	M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.

Hudbay Minerals ACZ Project ID: ***L68619***

Metals Analysis

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.	
Aluminum, total (3050)	M6010D ICP
Antimony, total (3050)	M6020B ICP-MS
Arsenic, total (3050)	M6020B ICP-MS
Cadmium, total (3050)	M6020B ICP-MS
Calcium, total (3050)	M6010D ICP
Copper, total (3050)	M6020B ICP-MS
Iron, total (3050)	M6010D ICP
Lead, total (3050)	M6020B ICP-MS
Magnesium, total (3050)	M6010D ICP
Manganese, total (3050)	M6010D ICP
Molybdenum, total (3050)	M6010D ICP
Nickel, total (3050)	M6020B ICP-MS
Selenium, total (3050)	M6020B ICP-MS
Zinc, total (3050)	M6010D ICP
The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Selenium, total (3050)	M6020B ICP-MS

Soil Analysis

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.	
Moisture Content	D2216-80
The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Moisture Content	D2216-80

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Sample Receipt

Hudbay Minerals

ACZ Project ID: L68619
Date Received: 09/20/2021 15:56
Received By:
Date Printed: 9/21/2021

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?		X	
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]			X
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

NA indicates Not Applicable

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
NA35988	20	NA	15	N/A

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

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Sample Receipt

Hudbay Minerals

ACZ Project ID:	L68619
Date Received:	09/20/2021 15:56
Received By:	
Date Printed:	9/21/2021

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACZ Laboratories, Inc. L68619

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Holly Beggy	Address: 5255 E. Williams Circle, Suite 1065
Company: Hudbay Minerals	
E-mail: holly.beggy@hudbayminerals.com	Telephone: 520-343-5174

Copy of Report to:

Name: David Krizek	E-mail: 5255 E. Williams Circle, Suite 1065
Company: david.krizek@hudbayminerals.com	Telephone: 520-495-3527

Invoice to:

Name: Lionelyn Garcia	Address: 5255 E. Williams Circle, Suite 1065
Company: Hudbay Minerals	
E-mail: rosemontinvoices@hudbayminerals.c	Telephone: 520-495-3545

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Holly Beggy **Sampler's Site Information** State AZ Zip code 85629 Time Zone AZ

***Sampler's Signature:** Holly Beggy

*I attest to the authenticity and validity of this sample. I understand that intentionally mislabeling the time/date/location or tampering with the sample in anyway, is considered fraud and punishable by State Law.

PROJECT INFORMATION — ANALYSES REQUESTED (*attach list or use quote number*)

Quote #: 2021-SOILS

PO#:

Reporting state for compliance testing: No

Check box if samples include NRC licensed material? [ ]

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Drainage-1 (Under Plant)	Drainage 1-2-3-4	Ina Road WWTP-Soil	Plant Tissue RUSH				
D1-25 Bio	9/15/21, 8:32	PL	1	[ ]	[ ]	[ ]	[X]	[ ]	[ ]	[ ]	[ ]
				[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
				[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
				[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
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				[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

~~Samples have been sieved to 4mm with a #5 sieve.~~ HB

RUSH

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Holly Beggy Holly Beggy	9/15/21, 1:00	[signature] 9/20/21	1556

FRMAD050.06.14.14 White - Return with sample. Yellow - Retain for your records.

L68619 Chain of Custod